



Interagency Meeting Motiva Fairfax Terminal

Permanent Shutdown and Abandonment of Off-Site Systems - Path Forward

November 15, 2012

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Agenda

- Introduction
- Off-Site Shutdown Test Conclusions
- Human Health Risk Assessment Overview
- Long Term Groundwater Monitoring Program
- PSH Monitoring and Recovery
- Off-Site RCS Abandonment
- Reporting
- On-Site RCS Upgrades Update
- Bus Lot Transition Update

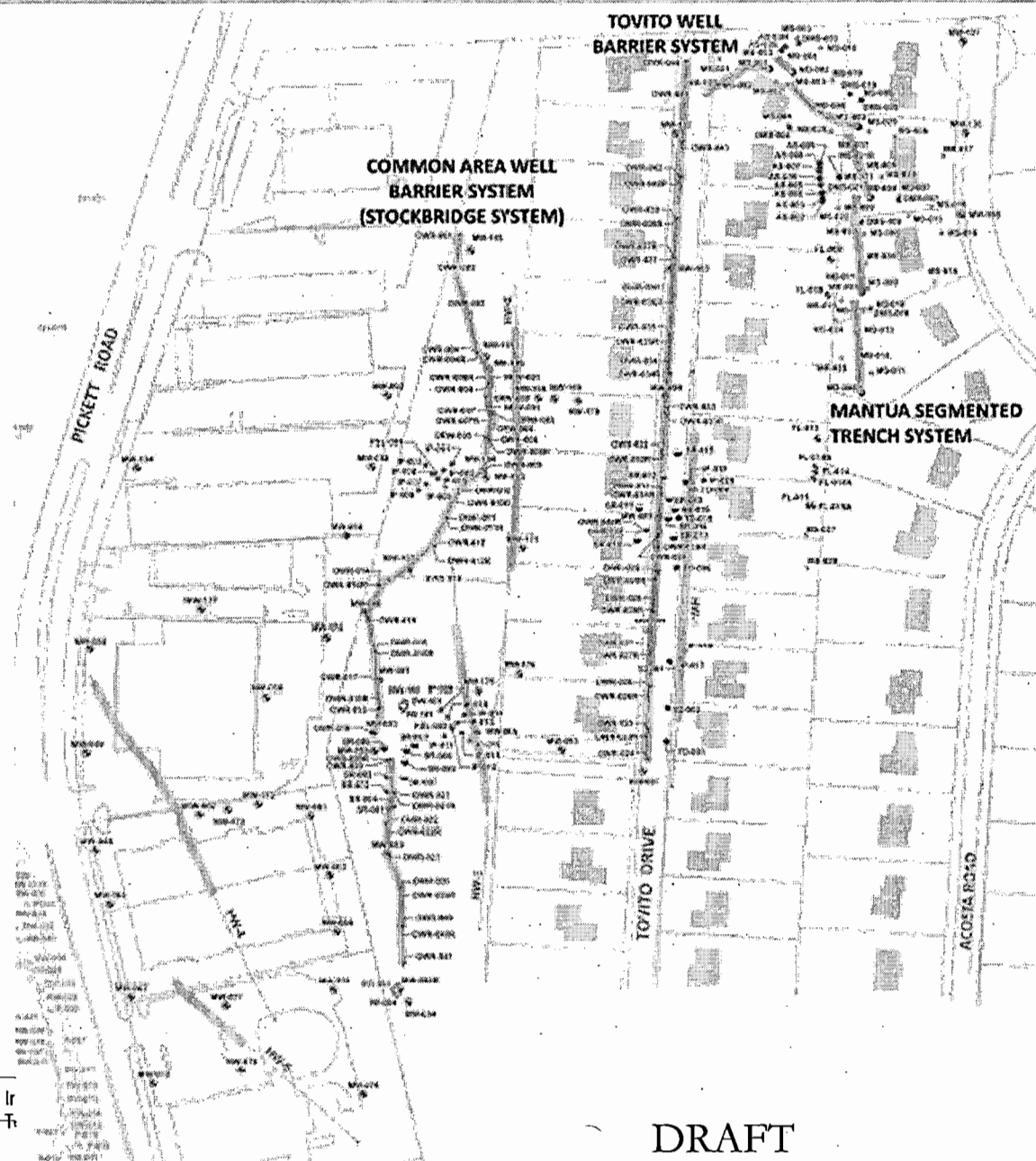
Introduction

Off-Site Remediation and Containment System Timeline





- 1993 – 2000, the off-Site Remediation and Containment System (RCS) was installed and portions began to operate
- April 2000, off-Site RCS became fully operational
- February 2009, EPA approved the shutdown ~~test~~ of the off-Site RCS
- April 2009, off-Site shutdown test began
- May 2011, 1-year extension ~~of the test~~ was requested by Shell and granted by the EPA
- May 2012, meeting with IATF to discuss the ~~test results~~
- October 2012, off-Site RCS Shutdown and Long Term Monitoring Work Plan submitted to EPA for approval

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Off-Site Systems and Nomenclature



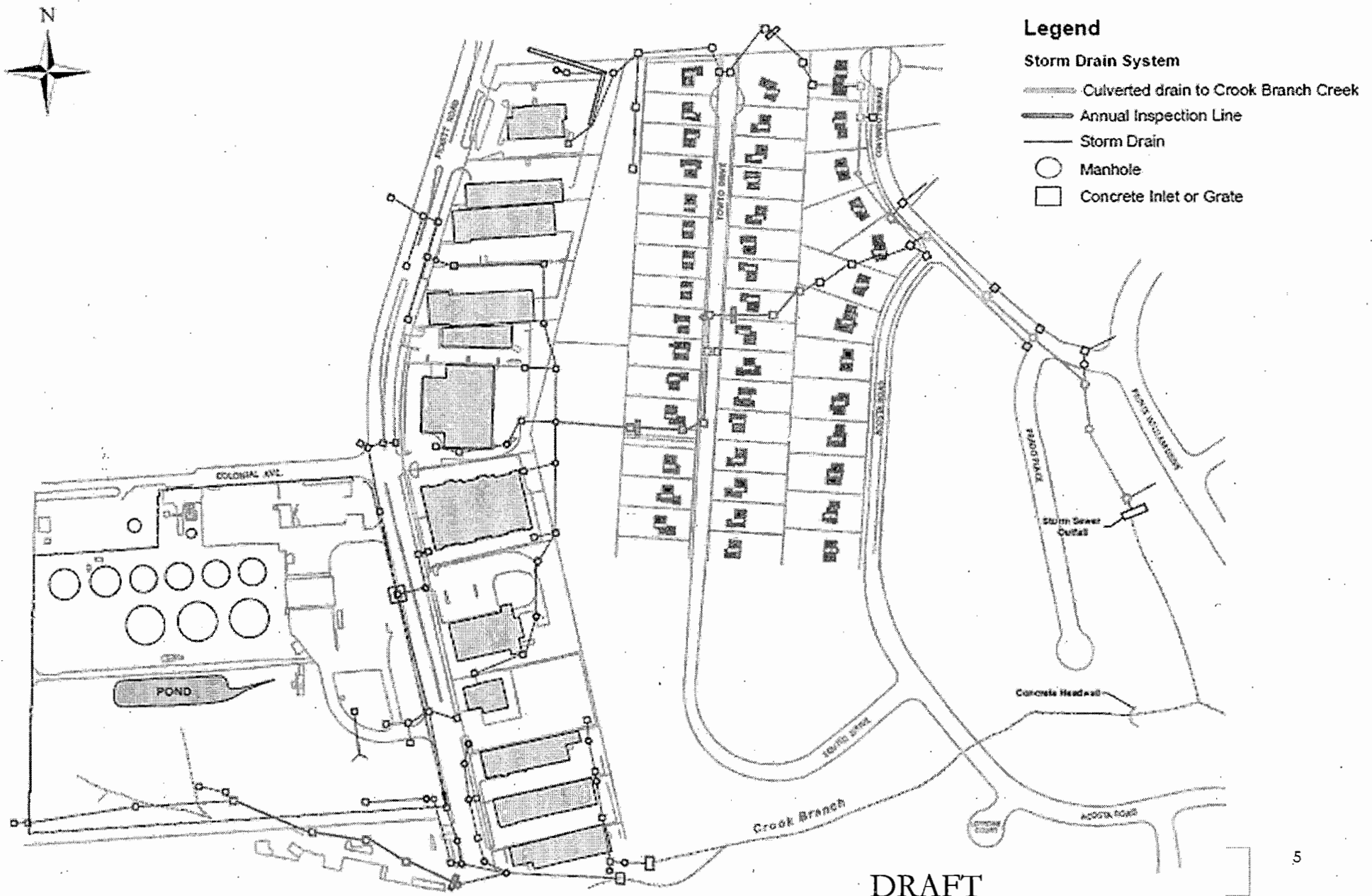
Off-Site System Components

-  Horizontal Infiltration Wells
-  Mantua Segmented Trench System
-  Stockbridge Remediation System
-  Tovito Well Barrier System

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May 2012

Location of Crook Branch Creek



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Off-Site Shutdown Test Conclusions

- The effectiveness of the Engineered system has reached diminishing returns and it no longer can perform any better than natural attenuation
- Shutting down the system will not pose unacceptable risk to human health or the environment:
 - Measured sub-slab vapor concentrations are within acceptable levels
 - PSH has significantly diminished over time and only small pockets remain in the Commercial and Common Area. (insert the latest PSH plume map after this slide)
 - Groundwater containment is no longer needed to prevent the migration of COCs to Crook Branch Creek. (AWQC for benzene is 54 µg/L; 74 µg/L for xylenes)

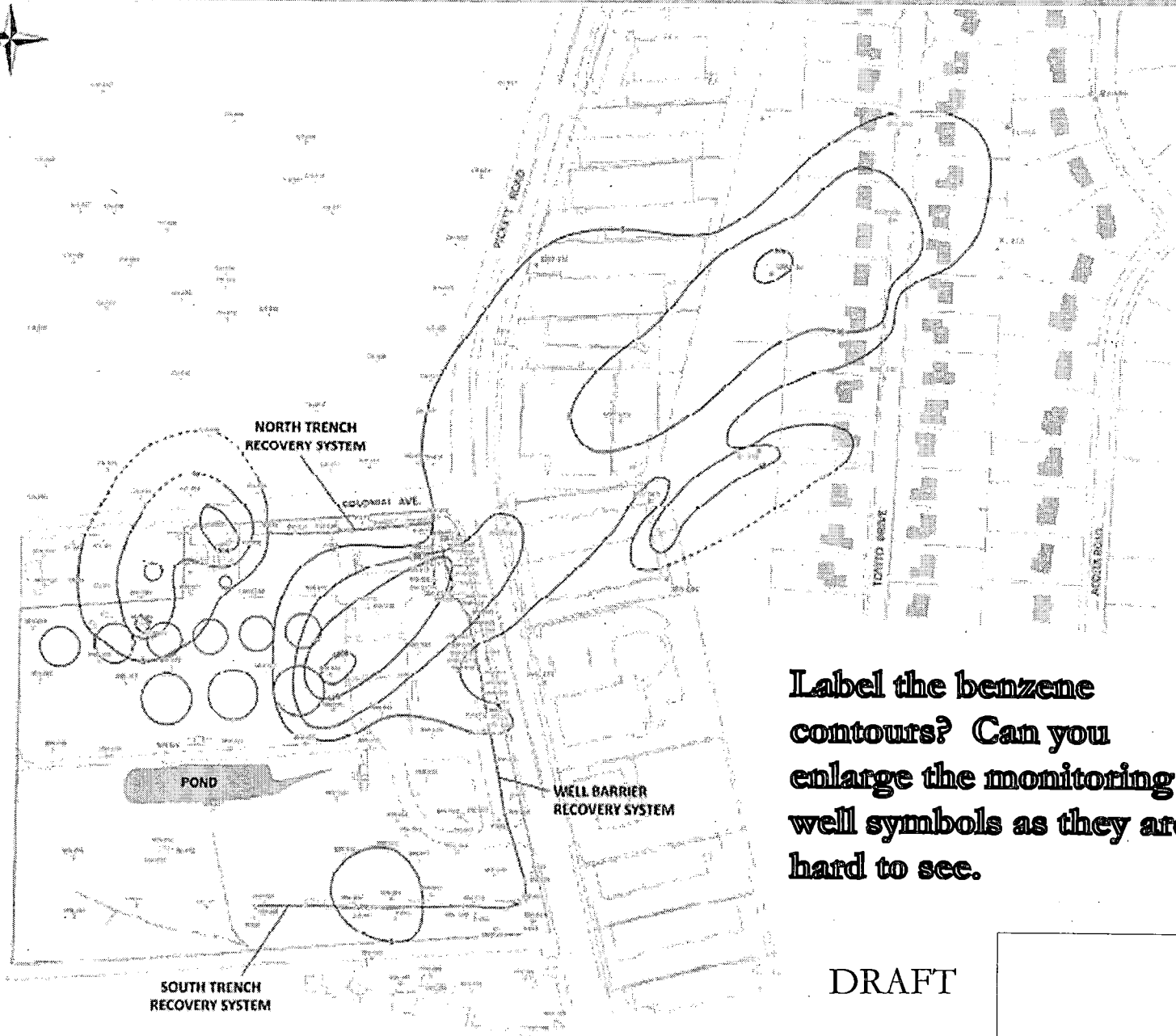
Risk Assessment Overview

- With the Statement of Basis, the EPA concluded that the risk for all contaminated media were within EPA's threshold of acceptable risk. However, based on a hypothetical use of groundwater, the goal of the clean-up is reduction of concentrations to drinking water standards
 - Benzene: 5 µg/L
 - Toluene: 1,000 µg/L
 - Ethylbenzene: 700 µg/L
 - Xylenes: 10,000 µg/L
 - Benzo(a)pyrene: 0.2 µg/L
- Groundwater concentrations off-Site have been reduced to below the drinking water standards with the exception of benzene in ~~some~~ off-Site wells

Long Term Monitoring Program

- Objectives:
 - Monitor natural attenuation
 - Monitor groundwater quality relative to risk to human health and the environment
 - Monitor groundwater elevations
- 15 Monitoring wells were selected based on:
 - Current benzene concentration trends in groundwater
 - Spatial representativeness
 - Accessibility for long term monitoring
 - Groundwater flow direction
- Samples will be collected on an annual basis
- Samples will be analyzed for benzene by EPA Method 8260B

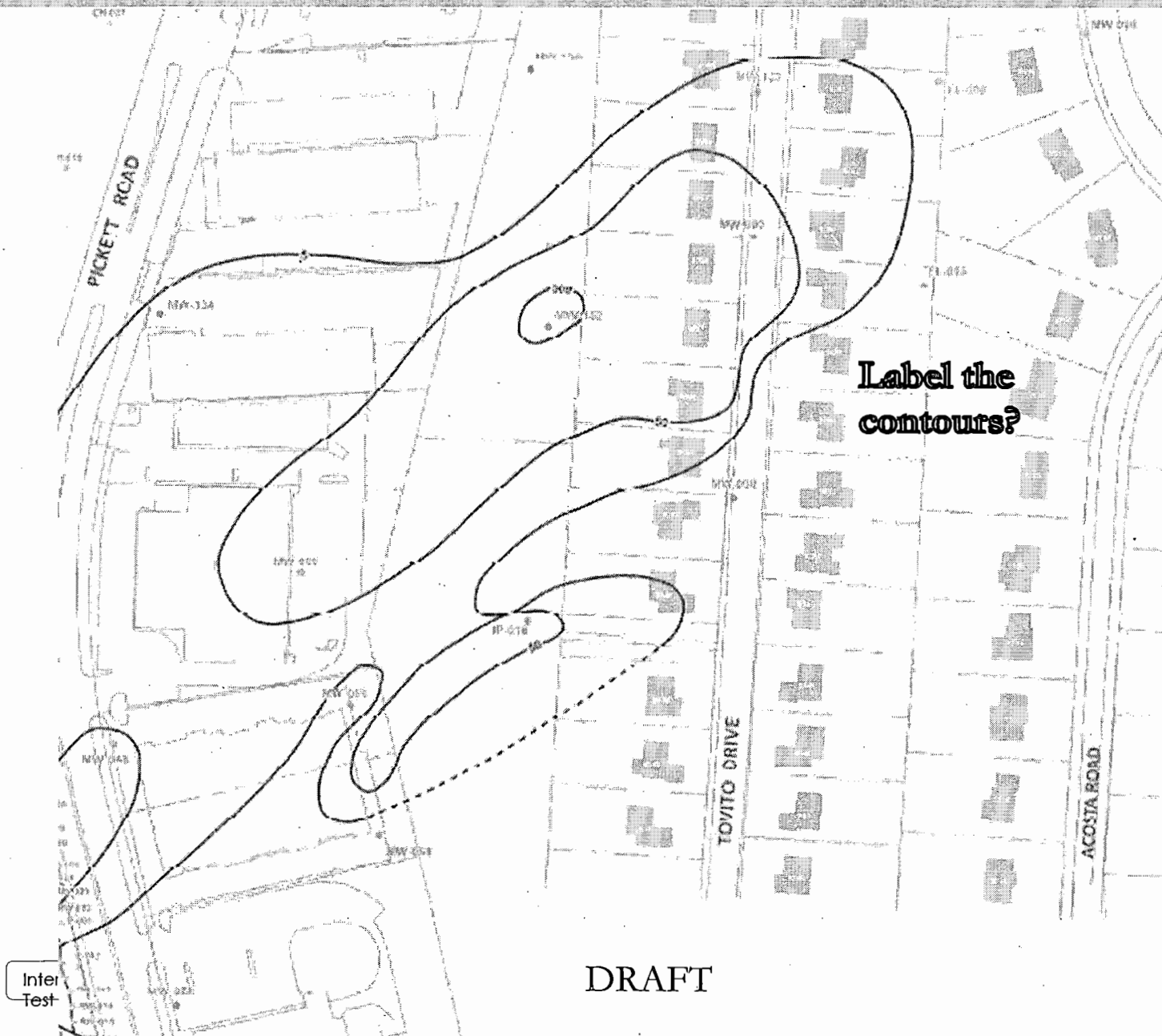
Long Term Monitoring Program (cont.)



Label the benzene contours? Can you enlarge the monitoring well symbols as they are hard to see.

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Long Term Monitoring Program (cont.)



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Slide 10

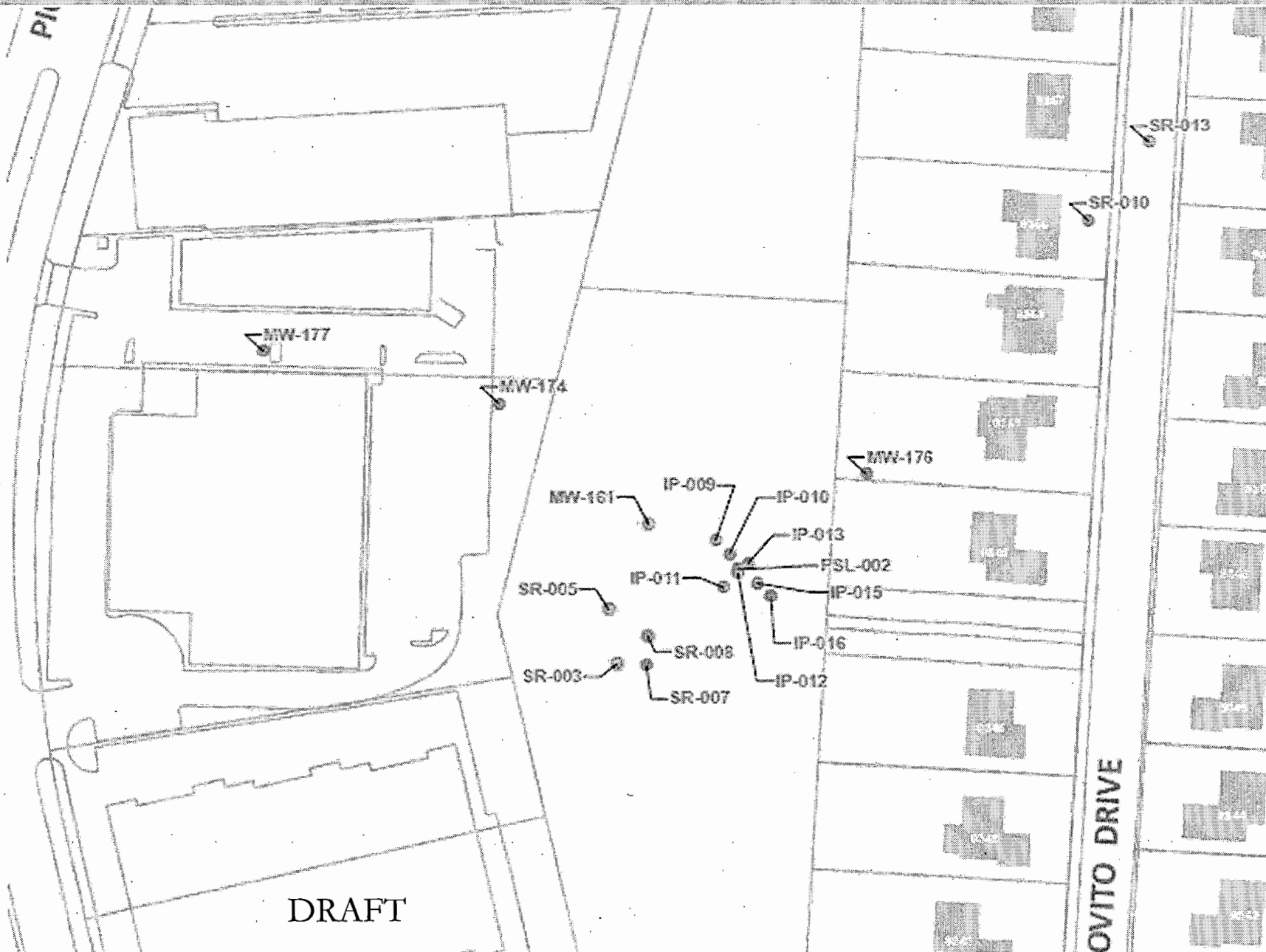
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afan, 11/13/2012

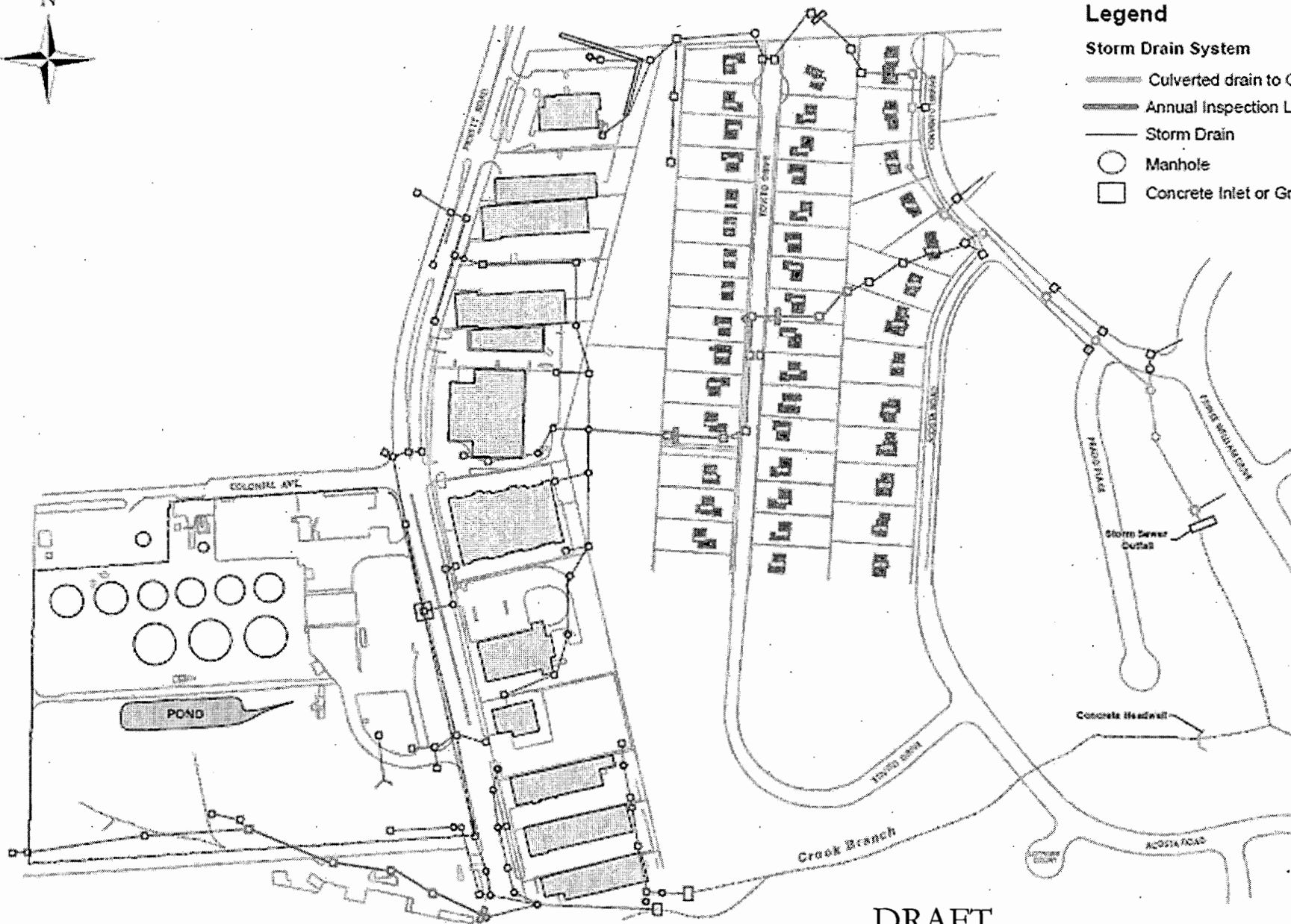
PSH Monitoring and Recovery

- 18 Off-Site monitoring wells will continue to be monitoring for PSH
- If PSH is observed in any off-Site well, the observed PSH will be bailed from the well
- PSH monitoring and recovery will be completed monthly until PSH is not detected for six consecutive months at which point a request will be made to the EPA to permanently abandon the well.

PSH Monitoring and Recovery (cont.)



Storm Sewer Inspections



Legend

Storm Drain System

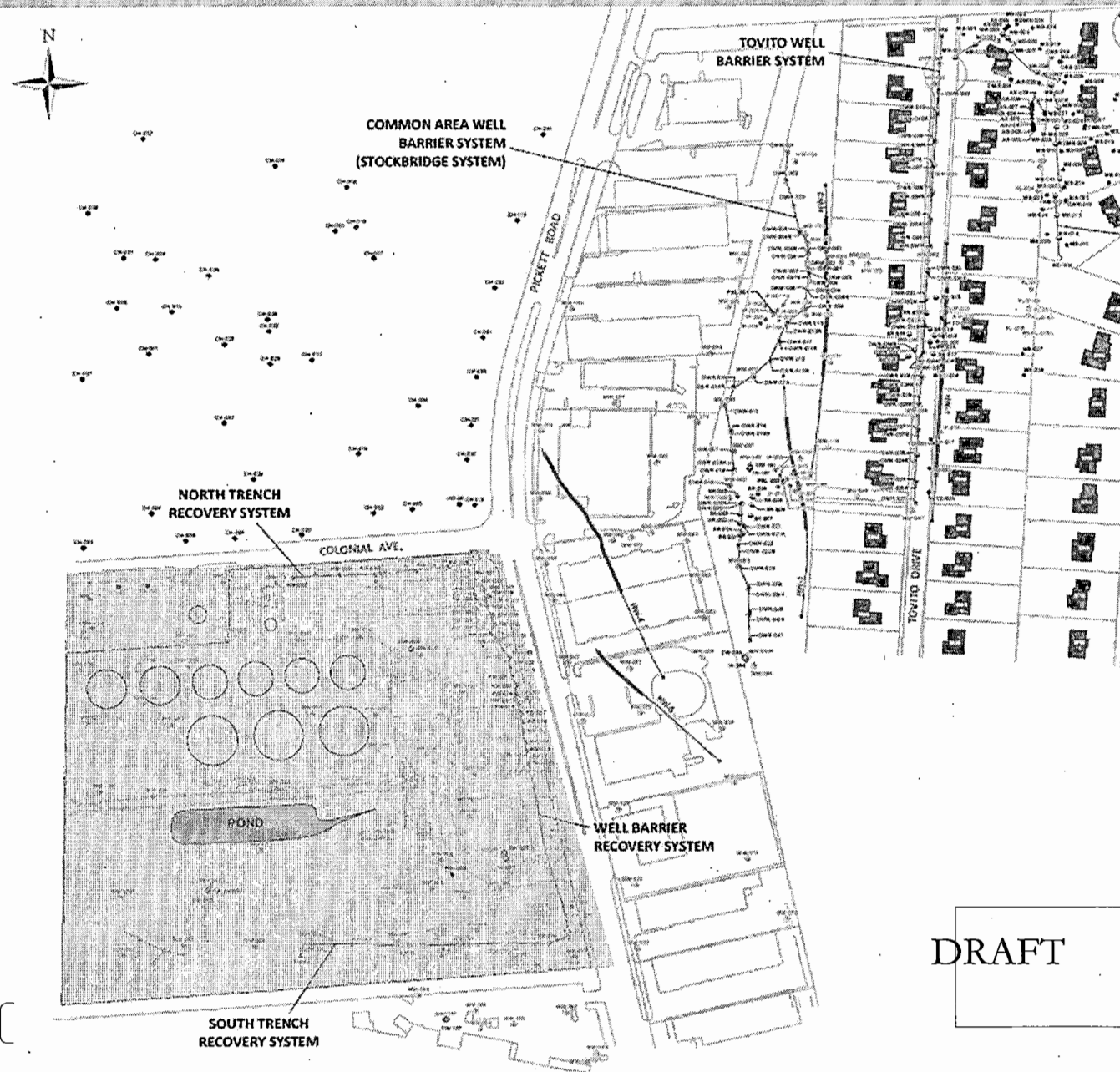
- Culverted drain to Crook Branch Creek
- Annual Inspection Line
- Storm Drain
- Manhole
- Concrete Inlet or Grate

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Off-Site RCS Abandonment

- Systems
 - Monitoring and Recovery Wells
 - Infiltration Wells
 - Subsurface System Piping
 - Vaults and Other Surface Features
- Procedures
 - In-place abandonment
 - Physical removal

Monitoring and Recovery Well Abandonments



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May 2012

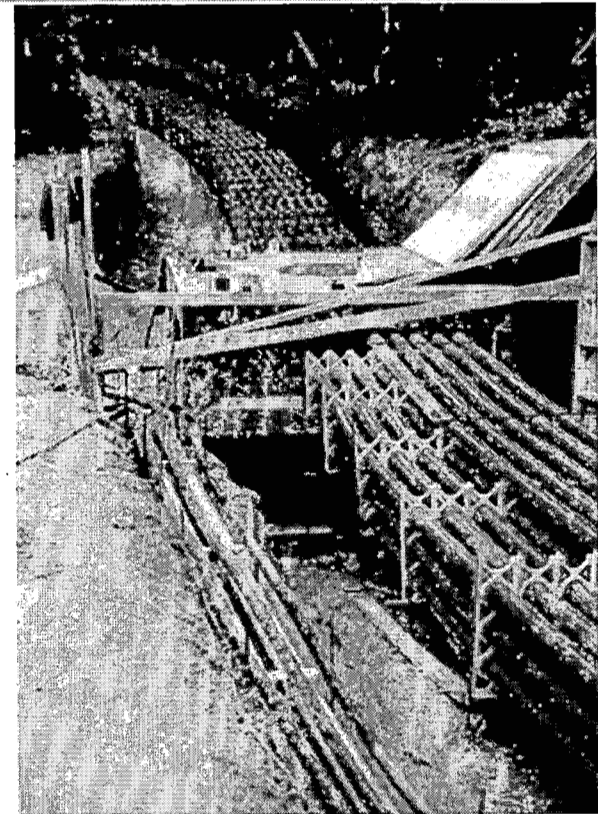
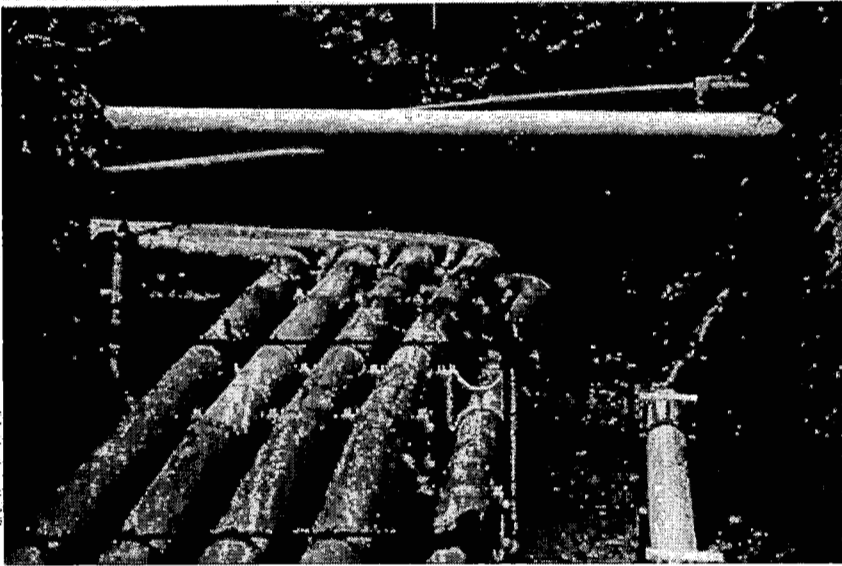
Monitoring and Recovery Well Abandonments (cont.)

MW NO. <u>OWR-28</u>	DATE <u>10/30/91</u>	
PROJECT <u>Star - Fairfax Terminal</u>	INSTALLED BY <u>GSI</u>	
TYPE OF RIG <u>Air Rotary</u>	FILE NAME <u>0324-063</u>	

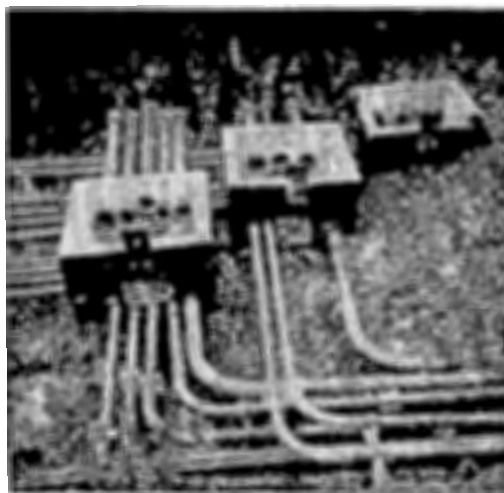
INSPECTED BY A. Hart, J. Cashman

Environmental Science & Engineering	Date <u>6/14/93</u>	Scale <u>NTS</u>	TYPICAL MONITOR WELL	
	Drawn By <u>NHT</u>	Approved By		
	Job No. <u>4901155</u>	Dwg/Rev No. <u>D-1.DRW</u>	Client <u>Star (Fairfax)</u>	Figure

Subsurface System Piping



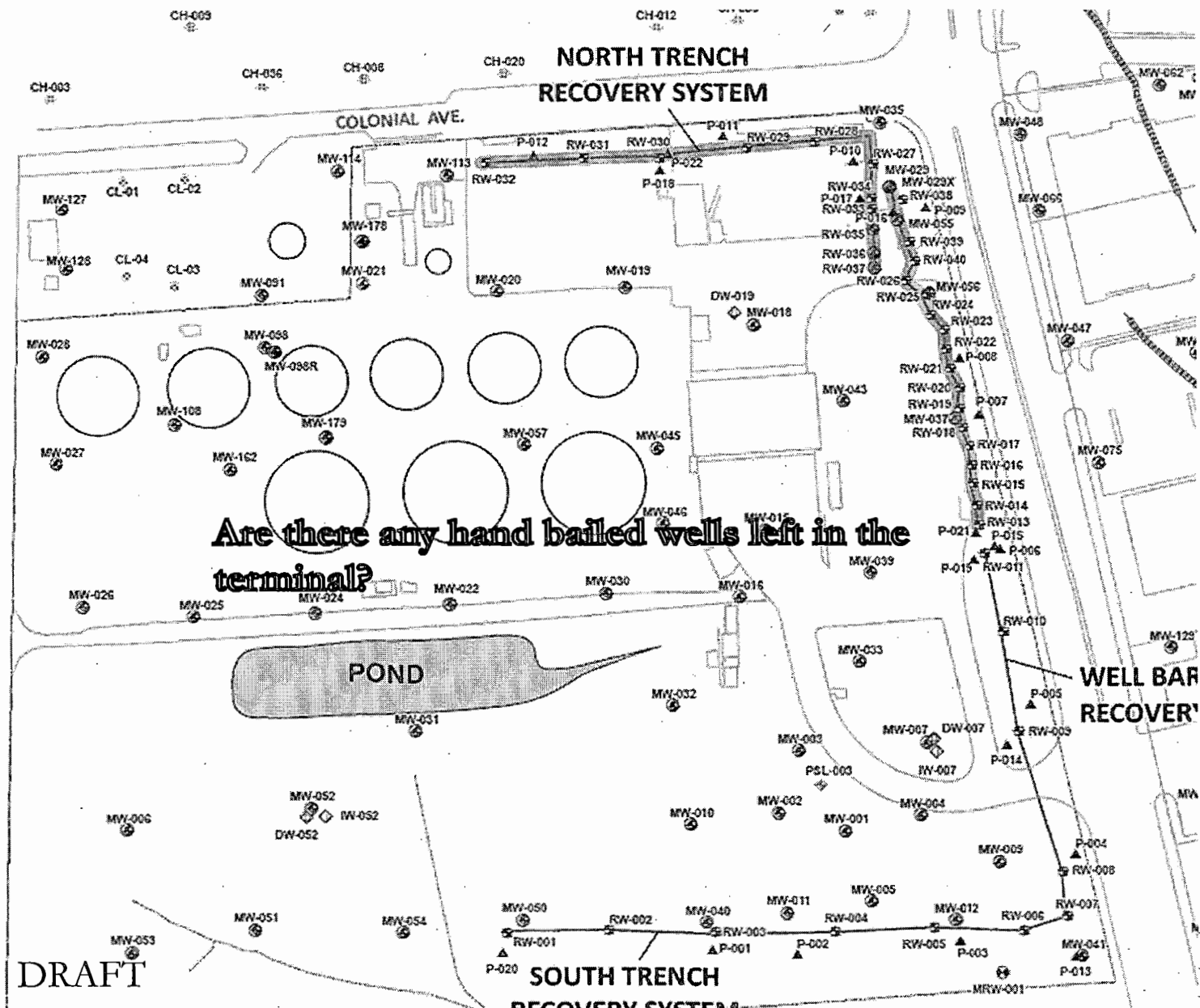
Vaults and Other Surface Features



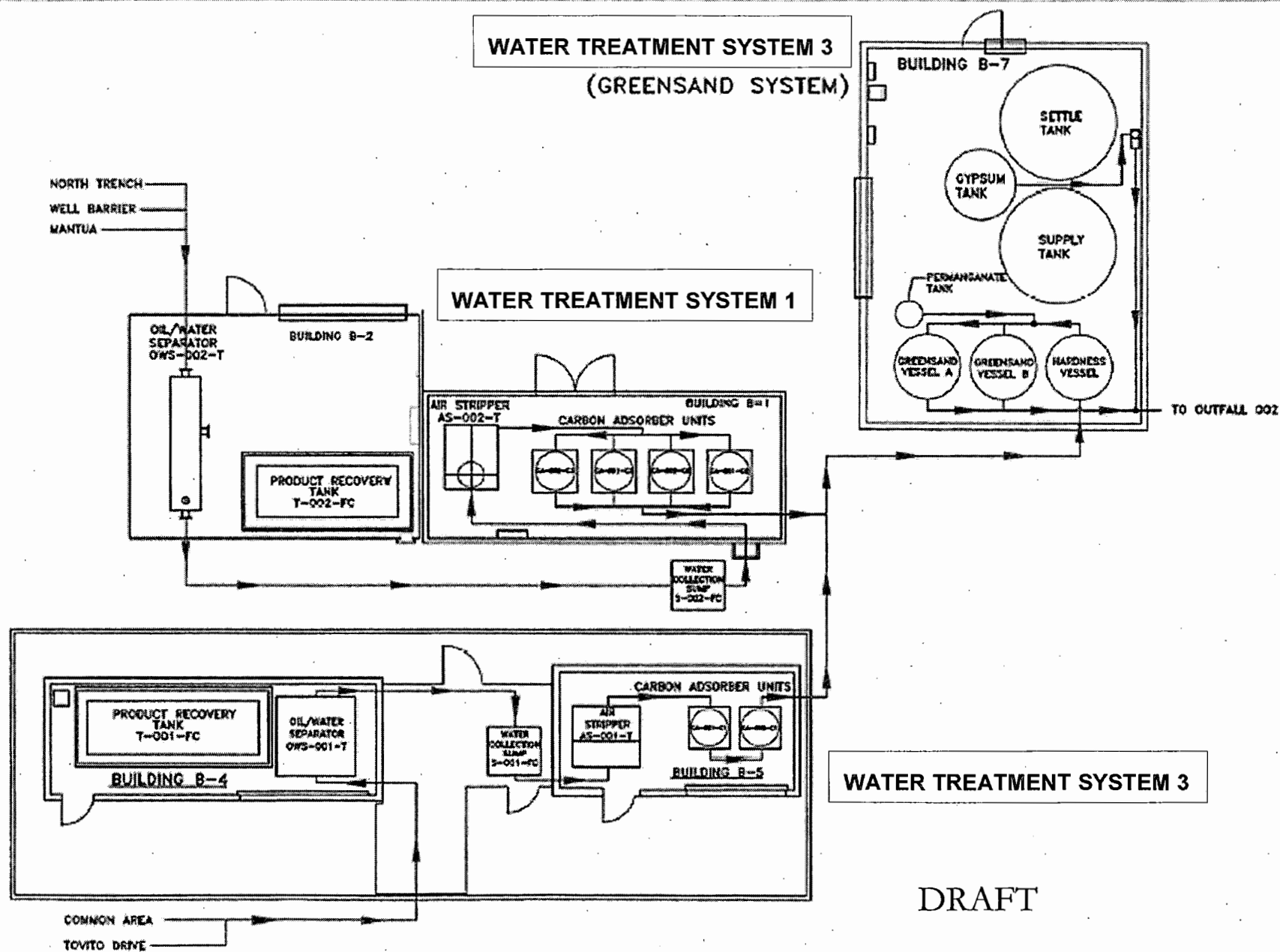
Reporting

- Samples are proposed to be collected annually in September from the off-Site wells.
- Annual Off-Site Monitoring Reports will be submitted to the EPA by November 30th of the same year.

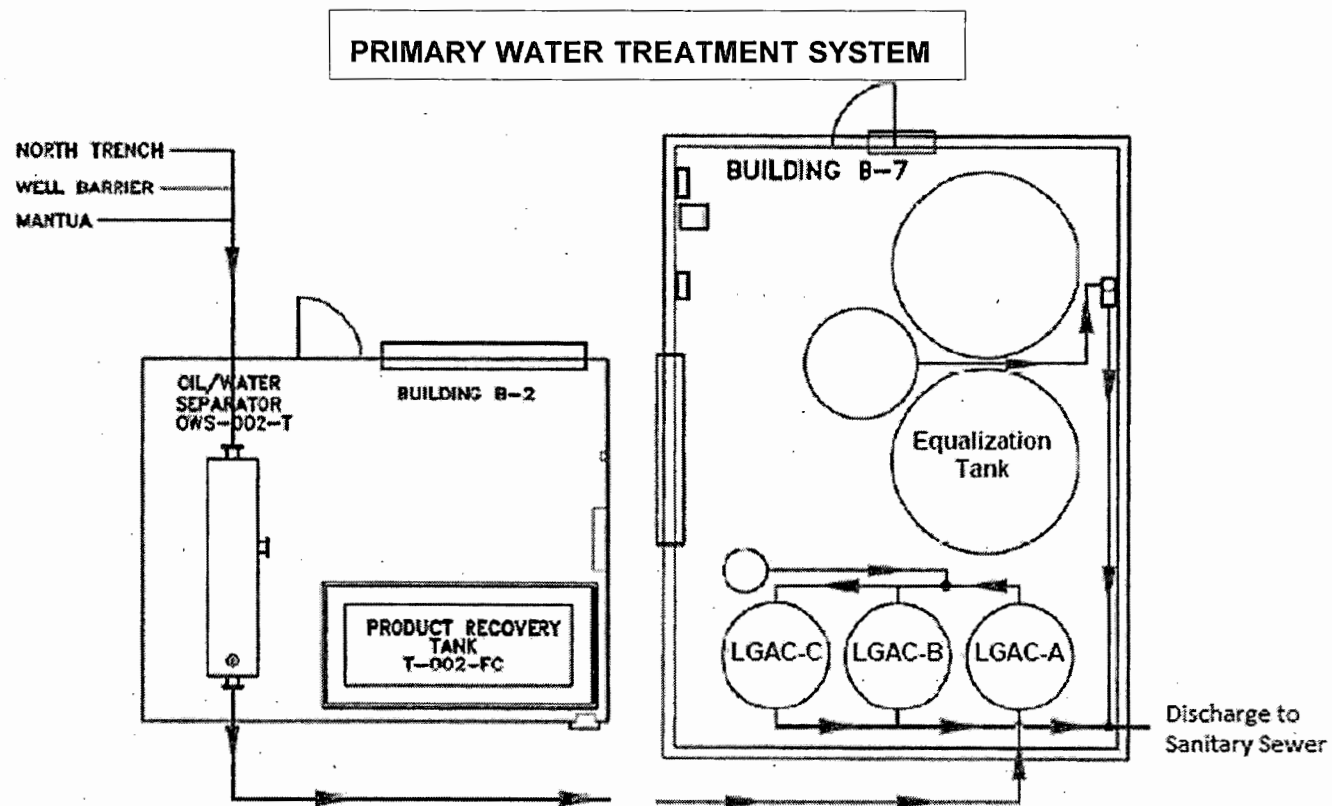
On-Site RCS System Upgrades



Current RCS System Configuration



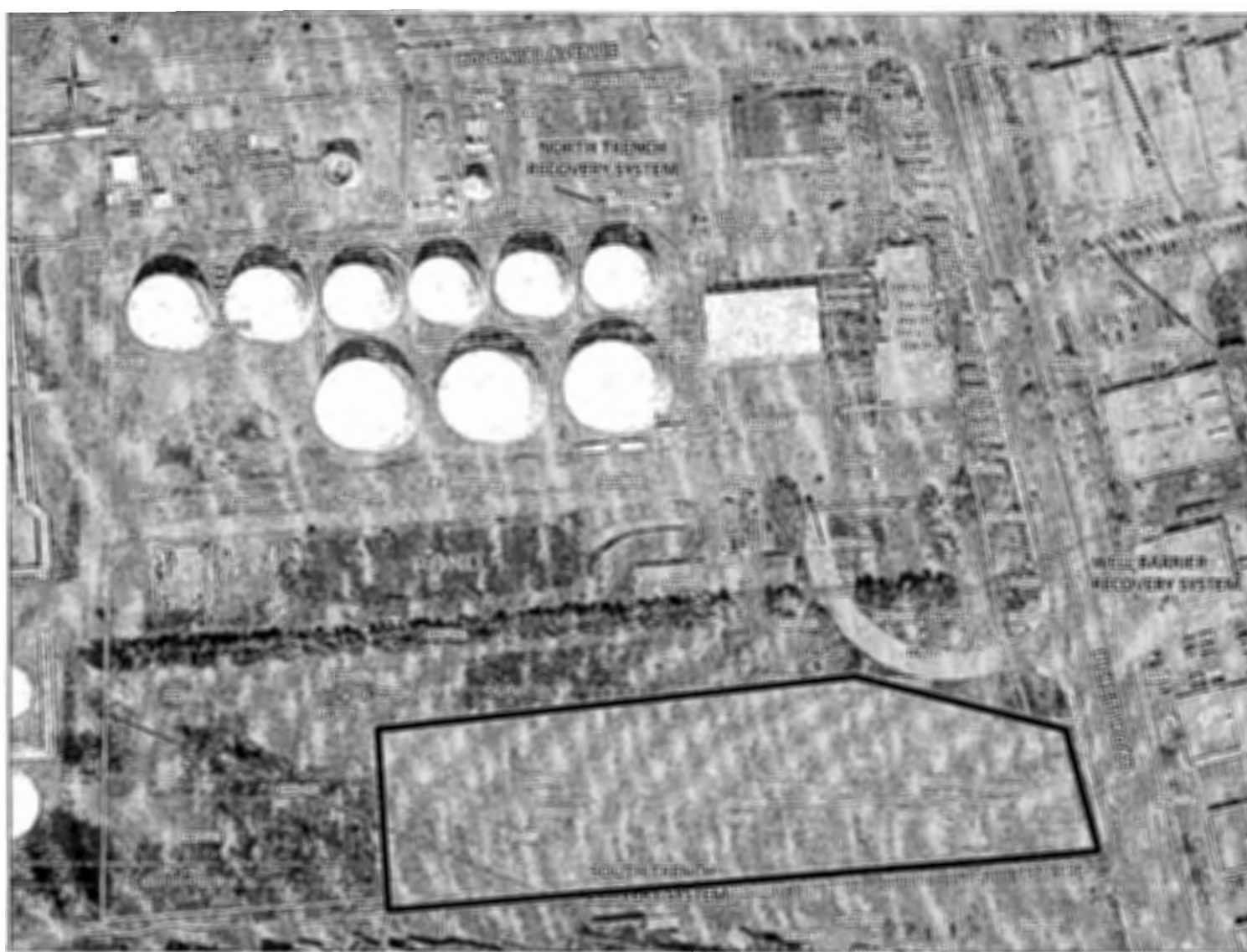
New RCS System Configuration

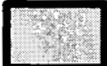


Bus Lot Transition Plan

- City of Fairfax plans to build a 2.34 acre school bus parking lot on the south lot of the Motiva Fairfax Terminal
- The South Trench Recovery System is currently in shut down mode but the system remains functional, as needed, to provide emergency containment after completion of the bus parking lot
- Monitoring well and recovery well manways within the affected area will be removed and reset
- Trench and recovery well piping will be reset as needed.

City of Fairfax: Proposed Bus Lot



 Area of interference by proposed Bus Corral.

Questions/Comments

